

1404.
R E P O R T
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K
WILLIAM CHAPMAN, ENGINEER,
ON THE MEANS OF MAKING
WOODFORD RIVER
N A V I G A B L E,
F R O M
LOUGH-ERNE TO WOODFORD-LOUGH,
A S
AN OFF-BRANCH FROM THE
LOUGH-ERNE AND BALLYSHANNON
N A V I G A T I O N;
(*With Observations on the practicability of carrying it forward
to the SHANNON.*)

P U B L I S H E D
BY ORDER OF THE SUBSCRIBERS TO THIS BRANCH,
1793.

L I M E R I C K:
PRINTED BY A. WATSON, AT THE KING'S-ARMS.

THE

OF

WILLIAM CHAMBERLAIN

OF THE

WOODFORD RIVER

NAVIGABLE

FROM

WOODFORD



FROM THE

EXCHANGING AND RECEIVING

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REPORT, &c.

GENTLEMEN,

AFTER minutely examining the state of the River between Woodford Lake and Lough Erne, (in the course of which it passes through Loughs Ballymagauran, Burrin, and Cuileach,) I have the satisfaction to say, that Nature and casual circumstances have done so much, as to enable you to make this communication at a very moderate charge.—The whole distance from the Lake of Woodford, to Lough Erne, is $13\frac{1}{2}$ Miles; and the expence, according to the annexed estimate, will be about £.5000.

Woodford River, except in particular places, is naturally Navigable, and deep; having mostly from 4 to 15 depth of Water. The principal obstacles are the Rapids at Curhoul, at Ballyconnel, at Ballyheady Bridge, and at the discharge of Lough Cuileach; all of which require to be surmounted by Locks; as should also the Passage under Aughalene Bridge; which, when Lough Erne is high, and even at the present time, has the appearance of requiring nothing more than a little increase of depth: (which might easily be given on the building of a Navigation Arch,) but as there is now scarcely more than a foot depth immediately above the Bridge, and the river below the Bridge falls in Summer nearly 2 feet, besides being penned up about a foot above the level

level of the *Lough*, in *Dry Summers*, by a stony Bar below Mullanacough (where the Erne, a mile and a half below its junction with Woodford River discharges itself into the Lake) it follows, that a Lock is necessary at this Bridge; and more particularly so, as there are some shallows between it and Curhoul which prevent the upper water from being lowered. The Bridge itself is in a very ruinous state, partly broken down and impassable for Carriages, and must be rebuilt. It passes over an Island and consists of two distinct parts; the Southern side has 4 Arches of 12 feet span, and the North 2 such Arches besides a tunnel of about 4 feet, in all 76 width of Water way; and as the Canal and Lock will necessarily occupy the Northern Passage, I recommend, whenever the Bridge shall be rebuilt, that 5 Arches of 16 feet be made on the South side, which will give 4 feet more water way than the whole gave before. At Curhoul, considerable Sums have already been expended; which although not useful to the full amount of the outlay will considerably reduce the future charge both of the Canal and Lock. The expence at Ballyconnel will be considerably lessened by the Mill Weir, and Head Race of the Flour Mill answering the purpose of the Navigation.—The Eel Weir at Ballyheady Bridge, will also in a certain degree be of service.—Nothing has been done in the fall below Lough Cuileach, but the situation of the Ground enables the purpose to be answered by a very low Weir.

The lesser obstructions arise from the nature of

of a considerable part of the River itself, which runs with a gentle fall between low Banks, thro' a very diffused Channel, interspersed with a number of Islands; and has only from one to two feet Depth of Water in Summer. The whole extent of these Shallows is about 2 Miles, and there are also a few narrow bars across the River with deep water on each side. The latter require no other remedy than dredging a Passage: and the continued Shallows (being deepened in particular places) may be made Navigable by contracting the Summer passage of the River by low Weirs, and confining it amongst the Islands in the most convenient Channel. Deepening or dredging is in many Rivers attended with a continual charge, but here it will not be so; because in general the small mountain Rivers which bring down gravel, deposit it in the Loughs, and nothing more than a muddy water passes down the River; therefore in all the confined places it will tend to deepen itself in place of filling up its Channel.—In all River Navigations, excepting those of vast width and a gentle current, there is a necessity for a Trackway, to draw the Boats up either by men or horses; and in narrow Rivers where the shores are flooded, a raised Bank is also necessary to point out the Channel. The shores of Woodford River are generally low, and *Flooded in Winter for a great part of its extent*, and the expence of a Trackway would be considerable were it not that the Loughs through which the River passes, in a great degree equalize its water, and prevent a high rise from

from rains of even some continuance; and, from the same cause give a greater depth in dry seasons.

From these favourable circumstances the track-way will in few places, have to be raised above 2 Feet; * and as a narrow path for men † will answer the present purposes, the expence will be very light.

Boats of from 10 to 20 tons will be sufficient for the present state of the commerce of the Country, and to carry off all its products:—therefore all that need now be done will be to bring the shallow parts of the River to such a depth as to admit the boats to draw from 2 feet to 2 feet 6 inches in Summer; and upwards to 4 feet

* From a little below the junction of Woodford River with the Erne, down to near the Bar, the Shores were, on the 5th of April, when I examined the River, mostly above two Feet flooded, and the Winter flood-mark was near four Feet above the River's surface: therefore, as the united Rivers are here many times the width of Woodford River, it may be sufficient to point out the Shores by Buoys or Beacons; or by planting aquatic Trees, which if secured from having their bark rubbed off by floating ice are by far the best Land Marks.

† Neither side of the River is favourable for a track-way for the whole length; and as it will be adviseable to change from Shore to Shore, 4 or 5 times, at a distance from any Bridge, it would be necessary in case of towing by Horses, either to have Wooden-Bridges at those places, or, as in the Trent, to take the Horses over in the Boats themselves.—These circumstances, added to the frequent change from River to Lake, and to the gentleness of the Current, render the track-way for Men more adviseable; but if a Horse track-way be in contemplation for a future period, it will be proper to make the Ditch, that forms the track-way, at a distance of 9 or 10 Feet from the foot of its inner slope, to allow for increase of width and height.

feet in Winter. Boats of about 40 feet long and 10 feet wide, will be best suited for Navigating in a frequent change between narrow Rivers and small Lakes: and these boats properly constructed will, at 2 feet draught, carry upwards of 10 tons; and at 3 feet upwards of 20: at the same time to enable a future increase of burthen from requiring more depth in the River; I recommend the Sills of the Locks to be laid so low as to admit of at least 3 feet in the driest Seasons, and also that they be large enough to admit of boats from 50 to 55 feet long by 12 feet wide, which is as large a size, as even taking into account the greater Navigations it may communicate with, can with any propriety be made use of in the one under contemplation; because the Upper Lough Erne† is full of islands and narrow channels in which a boat of large dimensions has not room to turn to windward; and should she by any accident get aground, even in smooth water, would be too unwieldly to get off, as well as at all times very heavy to be rowed; and impracticable to be so with any wind against her. The same difficulties would take place, in setting and lowering heavy sails, in crossing the small Loughs; and in turning into the mouths of the Rivers if the wind be contrary; when to these is added the unskilfulness of inland Boatmen, the arguments may appear sufficiently strong; but there are still further considerations.—In a
Navigation

† The Lower Lough Erne, also, is near Castle-Caldwell, equally difficult for large Boats, on account of the number of sunk Rocks, and the narrow Channels amongst them.

Navigation where the depth of water is very limited, it becomes of importance, that a Boat draw *very little water when light*; and as it is evident, that Boats of larger dimensions ought to be more strongly timbered and planked; it follows, even admitting them to be built of the *same height only*, & that they must draw more water; and consequently not possess an increase of burthen, proportionate to their dimensions and expence.—In simple Canals, communicating with each other, a uniformity of dimensions should in general prevail; but in *mixed Navigations, compounded of Rivers, Lakes, and Canals, regard must be paid to natural circumstances*: and all that can with propriety be done, will be to pursue the best plan they admit of; which must of course, vary with the circumstances themselves; and a uniformity can no more be expected than in ships trading to different ports, and traversing different seas.—The same species of Navigation as the one between Lough Erne and Woodford Lough, is applicable from Belturbet to the rising Town of Killishandra; and up to near the head of the Erne, to Lough Gawnah; the execution of which would be attended with very few obstructions. The same, also, is suited to a continuation from Woodford Lake to the Shannon.—The Lake of Woodford is very nearly two Miles long, and from thence follow-
ing

& Boats of an increased Length and Width, ought, if Navigating Lakes, (or wide Waters where the Wave has room to rise) to have a proportionate increase of Height which would deduct still more from their Burthen at a given Depth.

ing the course * of the river, it is four miles to the town of Ballinamore; and just two miles further to the outlet of the Lough of Ballyduff, from whence it is Navigable by a chain of small Lakes to the west-end of the Lough north of Kishcarrigan; from which, a Canal of about four miles in length, would pass through favourable ground in the vale north of Sheebeg, and onwards to the Shannon at Leitrim.—Not having ascertained the quantity of rise and fall in this line, I can't take upon myself to say further, than that the expence will be moderate, compared both with the distance and the object. The town of Ballinamore is already considerable, and is encreasing: and if nothing further be done, than to make the Navigation from Lough Erne to Woodford Lough; and to clear a small bar at the discharge of the Upper River, (which is Navigable at all seasons for above a mile) water carriage will be had to within less than a mile and a half of the town, provided a Road be made from it to where the river, in coming upwards from the lake, takes its course to the south.—The river from thence might easily be made Navigable, for Boats of five tons burthen, to within a quarter of a mile of Ballinamore; but as the course would be very circuitous, and no way advance the future execution of the plan I have recommended; (which from near the discharge of Lough Ballyduff, should be by a Canal in the straightest and most practicable

* In a direct Line it is less than half as much, but probably could not be shortened by a Canal more than a Mile.

practicable line,) I of course do not advise it. —In the Navigation that I have estimated, between the Lakes of Erne and Woodford, I have not included the value of the ground occupied by the track-way, because the damage will be trivial; only about 4 feet width that will be trodden by the haulers, and the width of the ditch out of which the banks will be formed:—and also were it many times as great, the injury would be trivial when compared with the vast advantage that will be acquired by having a water communication with the markets of Enniskillen and Ballyshannon. The average expence of Canals with their locks, tunnels, &c. even excluding unfavourable circumstances, is two thousand pounds a mile, at which rate, the 15 miles of Navigation now proposed to be opened between Lough Erne and the head of Woodford lake near Ballynagore, would amount to £. 30,000, between which and £. 5,000, the probable expence of the present work, there is such disparity as to need no comment. And when it is further considered that the various branches of the loughs extend the advantages of the Navigation to a greater distance than the bare line of a Canal would do; there can be no doubt of the propriety of carrying the proposed design into execution.—Its benefits would be diffused through the whole country, but the parties most deeply interested are the proprietors and holders of the adjacent estates.

Ireland has been enriched by no cause so much as by the export of her redundant Harvests; but this

this advantage has been chiefly confined to tracts of country having an easy communication with the sea ports, and chiefly the borders of the Barrow, the Nore and the Suire, where they have an easy access to Waterford. Such places as were remote from this convenience must evidently have disposed of their products so much cheaper, as all the difference of carriage; which in many instances amounts to a prohibition, by reducing the prices so low, as scarcely to yield more than to defray the charges of tillage, exclusive of any rent for the land producing the article to be sold. The conclusion is obvious, that obtaining easy access to a sea port, must greatly raise the value of landed property by giving its products the certainty of a foreign market, as well as a greater choice of those at home.

It also operates still further by the cheaper acquisition of foreign products, particularly in the heavy articles of deals, timber and iron, so necessary in all buildings whatsoever; and in all erections for the establishment of manufactures. A further inducement to carrying forward this work is, that it will be a step to the communication with the Shannon already mentioned; the powers for carrying which into effect, are applied for in a bill now before parliament for making that river navigable, and executing various off-branches;—this branch however will not take place, but in consequence of the one from Lough Erne being effected; and then, besides having access to Enniskillen, Ballyshannon, &c. all the country bordering on Woodford river

river, may have the option of sending its produce to Limerick, which is now becoming the greatest port in the kingdom for the export of grain, and also have a communication with the capital by means of the grand or royal Canals:—under these circumstances the lands bordering on the proposed line of Navigation, will possess more local advantages than most parts of the kingdom; in place of being, as at present, a secluded corner of the isle, and in a great degree debared from the improvements of Tillage, by the distance from, and heavy expence of land carriage to any sufficient market.—I hope your endeavours will be crowned with the success that apparently awaits them,

And I am very respectfully,

GENTLEMEN,

Your obedient humble servant,

WILLIAM CHAPMAN.

Limerick, April 30, 1793.

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OF THE

OF A PROPOSED NAVIGATION

FROM LONDON TO NEW

TO WOODBOND LAGOON

Four Locks of 60 feet each and the	
Gates, 120 ft. width of chamber and	140 0 0
of various kinds at 100 ft. each	100 0 0
Bridges over the Locks at 100 ft. each	100 0 0
and Railyards	100 0 0
Removing the bar below Millins	100 0 0
couch and two shoals below Augu-	100 0 0
stine bridge	100 0 0
Deepening the shoals at Millins and	80 0 0
at the Mill at 100 ft. each	80 0 0
Finishing the Canal and Railyards	100 0 0
Canal	100 0 0
Making a Channel within the Island	100 0 0
opposite Millins Wood, and re-	100 0 0
moving all obstructions to a bar at	100 0 0
the great Island below Railyards	100 0 0
Five miles of Trackway from the	100 0 0
junction of Woodford River with	100 0 0
the River, a mile of which is up-	100 0 0
posed high, and the rest to	100 0 0
be a low height, with a per-	100 0 0
centage of 1 in 40, and 40 per	100 0 0

ESTIMATE

E S T I M A T E
OF THE EXPENCE
OF A PROPOSED NAVIGATION,
FROM LOUGH ERNE
TO WOODFORD LOUGH.

	£.	s.	d.
Four Locks of 63 feet between the Gates, $12\frac{1}{2}$ width of chamber and of various falls, at £.350	1400	0	0
Bridges over the Locks at Aughaline and Ballyheady,	120	0	0
Removing the Bar below Mullina- cough and two shoals below Augh- aline-bridge,	150	0	0
Deepening the shoals at Kilcorby and at the Eel Weir at Curhoul,	80	0	0
Finishing the Canal and Weir at Curhoul,	270	0	0
Making a Channel within the Island opposite Annagh Wood, and re- moving all obstructions to as far as the great Island below Ballyconnel,	75	0	0
Five miles of Trackway from the junction of Woodford River with the Erne, 2 miles of which I sup- pose high enough, and the rest to average 2 feet height, which with fodding may amount to 4s. 8d. per Perch, or 74l. 13s. 4d. per Mile,	224	0	0

Canal

	£.	s.	d.
Canal above and below the Lock at Ballyconnel Mills, -	110	0	0
Deepening the Mill-course and repairing the Weir, -	80	0	0
Deepening and contracting the shallow parts of the River between Ballyconnel and Ballyheady, about 600 Perches of Trackway, at an average of 5s. per, -	400	0	0
Canal at Ballyheady and alterations of the Weir, - - -	150	0	0
Deepening and contracting various parts of the River between Ballyheady and Curleach, -	140	0	0
500 Perches of Trackway, at 5s. per, -	160	0	0
Canal at Curleach, - - -	125	0	0
Towing Paths on the communications between the Loughs of Curleach, Burren, Ballymagauran and Woodford, about 200 Perches, at an average of 10s. per Perch, -	90	0	0
Making a deep channel through the Eel Weir below Mr. Gore's, deepening the channel into Woodford Lough, and making a Navigation Arch in the Bridge, -	100	0	0
Boats and Machinery, -	250	0	0
	150	0	0
	4374	0	0
Incidents and Superintendence, 15 per Cent.	655	7	0
	<u>£.5029</u>	<u>7</u>	<u>0</u>

£ 100

110 0 0

80 0 0

400 0 0

150 0 0

140 0 0

160 0 0

125 0 0

90 0 0

100 0 0

250 0 0

150 0 0

437 0 0

652 7 0

£ 1092 7 0

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Canal above and below the Lock at
 Ballyconnell Mill.
 Deepening the Mill-cours and re-
 pairing the Weir.
 Deepening and contrasting the shel-
 low parts of the River between
 Ballyconnell and Ballyhealy about
 600 Perches of Trackway at an
 average of 2s per
 Canal at Ballyhealy and alterations
 of the Weir.
 Deepening and contrasting various
 parts of the River between Bally-
 healy and Curkesh.
 600 Perches of Trackway at 2s per
 Canal at Curkesh.
 Towing Paths on the communication
 one between the Loughs of Cur-
 kesh, Burren, Ballymahan and
 Woodford, about 200 Perches at
 an average of 10s per Perch.
 Making a deep channel through the
 Bel Weir below Mr Gore's deep-
 ening the channel into Woodford
 Lough, and making a navigation
 Arch in the Bridge.
 Boats and Machinery.

Incidents and Superintendence, 15 per Cent.

£ 1092 7 0

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